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ABSTRACT

Developed by the staff of the SCAT (Support, Competency-Assistance and Training) Project, the document deals with the third step of the systematic instructional model--sequencing short term objectives for exceptional students. The manual focuses on reviewing long term goals established by the child study team, converting these goals into long term objectives, establishing sequences of skills, and translating those skill steps into behavioral objectives. Sections cover the following areas related to short term objectives: purposes and outcomes, introduction, rationale, implementation, and frequently asked questions. Appended are sample forms for use in writing short term objectives and teacher-generated sample skill sequences for selected skills. (SBH)

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Short-term Objectives

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preface

The material presented in this paper was developed by the staff of SCAT (Support, Competency-Assistance and Training) - a Title VI-G Child Service Demonstration Project. The SCAT staff is committed to training teachers of exceptional children to use systematic instructional procedures.

Systematic instruction is a PROCESS through which teachers provide maximum learning opportunities for exceptional students. As defined by SCAT, systematic instruction includes seven components:

1. Initial assessment;
2. The establishment of long term goals;
3. The sequencing of short term objectives;
4. The selection and implementation of an instructional program;
5. The establishment and utilization of a sensitive measurement system;
6. The use of data decision rules to monitor program interventions and;
7. The establishment and utilization of a system for on-going assessment.

This paper deals explicitly with the third step of the systematic instructional model: sequencing short term objectives. Specifically, this manual deals with reviewing the Long Term Goals established by the Child Study Team, converting these goals into long term objectives, establishing sequences of skills, and translating those skill steps into behavioral objectives.

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Teacher-generated Sample Skill Sequences for Selected Skills

purposes

The purposes of this paper are to provide you with procedures and guidelines for implementing a system:

1. to translate long term goals into long term objectives,
2. to write skill sequences extending from the student's current performance level to the level specified in the long term objective,
3. to translate sequence steps into behavioral objectives.

outcomes

After reading this paper, and completing the exercises included, you should be able to:

1. convert long term goals into measurable long term objectives, including the learner, an observable behavior, the conditions under which the behavior will be measured, and the standard or criterion level of performance desired;

2. write behavioral objectives in abbreviated form;

3. extract a sequence of skills from an established instructional material;

4. evaluate the appropriateness of the sequence for an exceptional child when given a set of evaluation guidelines;

5. alter sequences extracted from commercial materials when the instructional steps are not appropriate (adding steps to fill "gaps," slicing back to smaller, sequential steps);

6. generate your own teacher-made sequence. Following an analysis of the task to be taught, determine the component skills and order these component skills in a logical order from least to most complex.

7. translate sequence steps into short term objectives, including all components of a behavioral objective.

8. utilize instructional sequences as the basis for developing informal assessment tools, for monitoring child progress and for record keeping.

introduction

PEANUTS
OUR TEACHER HAS AN INTERESTING THEORY...
SHE SAYS TEACHING IS LIKE BOWLING
ALL YOU CAN DO IS ROLL THE BALL DOWN THE MIDDLE AND HOPE YOU TOUCH MOST OF THE STUDENTS
SHE MUST BE A TERRIBLE BOWLER!

The Systematic Instructional model designed and implemented by the SCAT Project is focused on making instruction for exceptional children more systematic and structured. Exceptional children do not progress in an instructional program that "rolls down the middle."

Each child needs an individually-prescribed educational program based on strengths, weaknesses, and educational needs. Once a student is identified for special services, and long term goals are established, you are ready to begin carefully structuring the teaching-learning process.

Sequencing short term objectives for exceptional children is certainly not like bowling. It takes careful translation of the long term goal into a long term objective, precise listing and ordering of teaching-learning steps extending from the student's current performance level (established during initial assessment) to the level prescribed in the long term objective, and the translation of each teaching-learning sequencing step into a measurable behavioral objective.

Though this paper will not improve your bowling, hopefully it will help you design instructional programs appropriate to each child with whom you work.

Have fun, but remember...teaching is not like bowling.

rationale

Though long term goals are primarily designed to provide direction to program implementers (classroom teachers, resource room teachers, speech therapists, etc.), they also establish an accountability system for evaluation of the instructional program. Each year the child's progress toward established long term goals is reviewed and the goals are updated based on this evaluation.

Carefully sequenced short term objectives serve this same function ...they provide direction and structure for instructional programming, and establish a system for documenting smaller bits of student performance improvement. During annual review, the Child Study Team will review the skill sequences established, and the skills the student has mastered during the instructional program.

Additionally, there are other ways in which skill sequences can be used. Many teachers use sequences as a basis for developing assessment tools for placement in a sequence, for periodic assessment of student performance, and as a basis for recording and documenting student progress.

There are many reasons for sequencing short term objectives. When written in precise terms, many instructional decisions are made before direct teacher instruction is initiated. Through writing objectives you determine exactly what skills will be taught.

One of the most difficult decisions to make in teaching is WHEN to move to another skill. Many times teachers base this decision on the wrong information.

> Try not to move to a new skill when a child has completed all of the practice pages provided on the current skill.
>
> Try not to move to a new skill when you "feel" the child has improved on the skill.
>
> Instead, use a more consistent, valid decision-making tool...use objectives to assist you in making decisions. Move to the next skill when a child reaches the criterion on established objectives.

Why bother to sequence short term objectives? Because careful and precise pre-planning will increase the chances that students master the subskills, and prerequisite skills necessary to achieving the level of performance designated in long term goals.

implementing

1. review established long-term goals

Following analysis of initial assessment information, the Child Study Team determined long term goals for each child, listing skill areas that need development, and expected outcomes for the school year. Review long term goals, checking to see that each includes:

a) the skill area(s) in which change is desired,

b) the level of performance expected by the end of the school year.

The following long term goals were established for Terry, a sixth grade, learning-disabled student who is to be served in a special education resource room:

Area:	Long Term Goals:
Math	Will solve addition and subtraction facts. Will solve addition computation involving 3-digits plus 3-digits, with regrouping. Will solve subtraction computation involving 3-digits minus 3-digits with regrouping. Will tell time to the minute. Will count money up to values of $10.00.
Reading	Will decode phonetically regular one-syllable words. Will decode words with common inflection endings. Will recognize instantly the basic vocabulary presented in Ginn 720, level 8. Will answer literal comprehension questions on a passage written at the 2.5 reading level.
Handwriting	Will form letters and words using cursive.
Written Expression	Will spell words presented through Book 2, Spelling (Behavioral Research Laboratories). Will write a complete sentence in response to a question.
Social	Will increase amount of time of on-task behavior.

Long term goals need not be written for ALL possible skill areas. Long term goals do not have to cover the total scope of the school curriculum, but must address all areas of special concern for the specific child...all of those skill areas that require special instructional procedures and resources.

For this reason, the Child Study Team will not need to formulate long term goals in such areas as art, P.E., social studies, and sciences UNLESS these areas are deficit areas of particular concern for the individual child.

The following IEP written for Terry illustrates how her long term goals might appear in the Individualized Education Plan (IEP). Review the IEP and the established long term goals. Are they appropriate? adequate?

INDIVIDUAL EDUCATION PROGRAM
Total Service Plan & Annual Review

Name: Terry Smith Sex: F Grade: 6th

Address: 1790 Green Street, Idaho Zip: 84519 Phone: 354-8970

Parents: Fred & Sally Smith Present Placement: reg. cl.& res. rm.

Date of Birth: 4/7/1964 C.A. 13

X Permission is given for the educational placement described.

___ Permission for this placement is denied.

9-5 '77 Fred Smith, Sally Smith
Date Parent Signature

Date of Child Study Team Meeting: 9/5/77
Signatures and Position of Team Members:

Arnold Gipson	principal
Lee Merriman	regular cl. tchr.
Sally Snider	resource tchr.
FRED HARRIS	resource tchr.
E. Johnson	sch. psychologist
Fred Smith	parent

Summary of Present Level of Student Performance:
RDG: low 2nd gr. level (Spache,IRI),unable to decode 1-syllable wds. limited sight vocab., gives consonant sounds accurately. MATH:knows +- facts to 5, reads #-500,knows coins & value,tells time to hr/half hour. HANDWRITING:all manuscript, name in cursive WRITTEN EXPRESSION:spells sev. irreg. wds.encodes cons. short a & i

Placement recommendations (including extent of time in reg. education & legal category of exceptionality for state funding purposes only):

Learning Disabled. Placement in resource room for 1 hr (reading/lang. arts), 45 min (math). Remainder of the school day in regular classroom

LONG TERM GOALS	Special Ed. Program and/or Related Serv.	Person(s) Responsible	Date of Placement	ANNUAL REVIEW Date: 5-15-78
a. will solve + and - facts	resource room	Sally Snider	9/21/77	a. mastered 35 per min. 100%
b. will solve 3-dig. + 3-dig. problems with regrouping	"	"	"	b. mastered, 100%
c. will solve 3-dig. - 3-dig. problems with regrouping	"	"	"	c. additional practice needed in subtraction with regrouping
d. will tell time to minute	"	"	"	d. mastered, 100%
e. will count money to $10.00	"	"	"	e. mastered, 100%
f. will read phonetically-regular 1-syllable words	resource room	Fred Harris	9/21/77	f. mastered short vow.,final e, long vow. digraphs, work needed on other
g. will decode words with common inflectional endings	"	"	"	g. mastered, 50 per min, 0 errors
h. will recognize basic wds. in Ginn 720 through level 8	"	"	"	h. mastered all irreg. words through level 7
i. will answer literal comprehension questions on passage written at 2-5 level	"	"	"	i. accuracy increased to 75%, needs work on written rather than oral response

CONTINUED

** CHECK POINT **

Select one student that you have worked with in class. Write at least five appropriate long term goals for this student.

1.

2.

3.

4.

5.

Evaluate your long term goals:

Did you state the skill area in which change is desired?

Did you state the type of desired change (increase/decrease)?

Did you include a measurable behavior?

Does the goal describe the expected level of performance?

2. translate long-term goals into long-term objectives

The long term goals established by the Child Study Team are usually quite general and encompass a number of specific skills. You will need to break these goals into smaller sequential steps leading to attainment of the long term goal. However, before beginning the process of writing instructional sequences, it is helpful to rewrite each long term goal in behavioral terms.

Goals written by the Child Study Team often lack many of the components commonly found in behavioral objectives. Behavioral objectives should include specification of:

a) the learner (who is behaving)

b) the observable behavior (what the learner will do)

c) the conditions under which the behavior will be measured, and

d) the criterion used to determine mastery.

When goals are restated in these terms, teachers know what to teach, how the skill will be measured, and what level of performance is expected. In writing goals in behavioral terms, you will be establishing the last step in your instructional sequence, the long term objective.

For example, one of the long term goals stated for Terry was

"Will tell time to the minute."

Though this is quite specific, it does not describe how the skill will be measured, or the desired performance criterion. If you were to add measurement conditions and criterion to this goal, the following long term objective might emerge:

"Given a clock set to an hour and minute, Terry says the time, including the hour and the minute correctly 18 out of 20 trials for 2 consecutive days."

You now have a great deal of additional information. You know

how the skill will be measured	Terry will be presented with a clock
the desired criterion	18 correct trials out of 20
the exact behavior that will be used . . .	orally saying the time (hour & minute)

There are many sequential steps that lead to this level of time telling. The long term objective,

> "Given a clock set to an hour and minute, Terry says the time including the hour and the minute correctly 18 out of 20 trials for 2 consecutive days,"

will be the last step in the instructional sequence.

If your long term goal includes a number of different skill areas, you may want to convert the goal into a number of long term objectives, allowing yourself to write sequences for each.

For example, if you were assigned to teach Terry the first long term goal,

> "Will solve addition and subtraction facts,"

you might want to establish two long term objectives: one for addition and one for subtraction facts.

> "Given a probe sheet with 100 addition facts, sums to 18, Terry writes sums at 50 correct per minute with no more than 2 errors."

> "Given a probe sheet with 100 subtraction facts, minuends to 18, Terry writes answers at 50 correct per minute with no more than 2 errors."

This same strategy would be appropriate for Terry's goal concerning decoding of one-syllable phonetically-regular words. There are a number of different syllable patterns that could be separately sequenced. You may for example, want to establish a long term objective for short vowels, long vowels with final e (CVC e), vowel combinations (digraphs and diphthongs), and r-controlled vowels.

How should objectives be written?

Behavioral objectives always contain specific components: the conditions under which the behavior will be measured, disignation of who the learner is, the observable behavior, and the criterion or standard that will be used to determine mastery.

The components are usually written in a standard format:

CONDITION...LEARNER...OBSERVABLE BEHAVIOR...CRITERION.

CONDITIONS

[When given a probe sheet of CVC words with short vowel i,]

LEARNER	BEHAVIOR	CRITERION
[Terry]	[will orally read words]	[with 45 per minute correct,

and no more than two errors.]

** CHECK POINT **

Convert each of the following long term goals to long term objectives. Use the standard objective format.

Remember, each long term objective will become the last step in your instructional sequence.

Long Term Goal: Will count money values to $1.00.

Long Term Objective:

Long Term Goal: Will solve addition computation with 3-digits + 3-digits with regrouping.

Long Term Objective:

The following long term goal should be broken into 2 long term objectives, before an instructional sequence is written. Write 2 long term objectives for this goal.

Long Term Goal: Will write letters in cursive, and write sentences using cursive.

Long Term Objectives:

1.

2.

Evaluate your long term objectives:

Did you include a LEARNER in each objective?
Did you include an OBSERVABLE BEHAVIOR in each?
Did you include the CONDITIONS under which the behavior will be measured?
Did you include the CRITERION of performance (standard) desired for each?

All objectives should include these components. However, many busy teachers use abbreviated forms for objectives. The following formats illustrate possible abbreviated forms which include all the necessary elements for complete long term objectives (the final step in a sequence) or short term objectives (the enroute steps in a sequence).

WHO:	Terry
GIVEN:	clock set to hour and minute
WILL:	orally say time
AT:	18 of 20 correct trials on 2 consecutive days
GIVEN:	probe sheet with CVC words with i
WILL:	read orally
AT:	50 corrects, no more than 2 errors per minute
GIVEN:	probe sheet of 100 add facts, sums to 18
WILL:	write sums
AT:	50 correct, no more than 2 errors per minute

When you write a series of objectives, you may want to use a table format to simplify objective writing.

Long Term Goal: Given a probe sheet with CVC words with short vowels, Terry says words at 45 per minute correct, with no more than 2 errors.

conditions	behavior	standard/criterion
CVC probe, short a	say words	45/min. 2 errors
CVC probe, short e	say words	45/min. 2 errors
CVC probe, short o	say words	45/min. 2 errors
CVC probe, short i	say words	45/min. 2 errors
CVC probe, short u	say words	45/min. 2 errors
CVC probe, mixed short a,e,o,i,u	say words	45/min. 2 errors

** CHECK POINT **

For each of the following long term objectives written in standard format, rewrite the objective in an abbreviated form. Use the abbreviated forms presented in this paper, or develop a form that will be useful to you.

Remember that even in an abbreviated form, the objective must include the basic components of an objective: the conditions, the learner, the observable behavior, and the criterion or standard of performance expected.

Long Term Objective:

Given the verbal letter name, Terry writes in cursive each of the lower case alphabet letters with appropriate size, relationship to the line, and formation.

Long Term Objective:

When given any group of coins and bills with values to $10.00, Terry will count the money and say the value with 15 correct trials out of 15.

Long Term Objective:

When given 25 3-digit + 3-digit addition problems, Terry will write the answers within 5 minutes with no more than 2 errors.

Evaluate your abbreviated objectives:

Did you include all necessary components... the CONDITIONS, LEARNER, OBSERVABLE BEHAVIOR, and CRITERION?

Are your abbreviated objectives simpler and more efficient?

Will your objectives be easily understood by others?

How do you determine the criterion within the objective?

This is a difficult question. Many teachers respond to this quandary by not writing objectives at all. However, even an arbitrarily-established criterion is better than no criterion at all. There are a number of elements to consider in establishing criteria:

a) what level of performance to expect... how much accuracy?

Many times criteria will be in terms of accuracy (for example, in spelling, math or answering comprehension questions).

Generally, if the skill is very basic and will provide the foundation for later learning, you want to set a high accuracy criterion (between 95-100%).

> For example, if the student is learning addition facts, isolated consonant sounds, or numeral naming, a high level of performance would be desirable.

If the skill is very complex, and errors might occur even when the skill is performed by proficient learners, the criterion may be set lower.

> For example, if a student was performing division problems demanding three digits be divided into six digits, a lower accuracy criterion may be acceptable.

Use this general rule: require the level of accuracy needed to allow the student to use the skill functionally. Setting high standards for basic skills will lead to overlearning through additional drill and practice. However, this overlearning will also increase the probability of retention and form a firm foundation for later skills.

b) whether to use rate or accuracy criterion

Rate and accuracy describe two types of criteria you may want to use in measuring student performance on various skills.

Accuracy refers to the type of criterion you are probably most familiar with, and is generally written in terms of raw score (10/12), or percent (95%). Accuracy criteria describe the performance of a student by comparing the number of correct and error responses made. Accuracy criteria are appropriate for measuring acquisition level performance.

Rate refers to the type of criterion you may be unfamiliar with, and is generally written in terms of a specified number of responses over a specified period of time (60 correct, 0 errors per minute). Rate criteria describe performance by describing both accuracy and fluency or speed. Rate criteria are appropriate for measuring proficiency level performance.

For more information on types of measures to use, read Step 5: Measurement, another SCAT training monograph.

> To determine which criterion to use, look at the skill being assessed.

For example, if a child decodes words with 100% accuracy, but reads only 5 words per minute, s/he would not have a skill that was very functional. For many academic skills, a rate criterion (# of correct and error responses during a specified period of time) is most appropriate.

> Rate might be used as a criterion for behaviors like saying letter sounds, writing add fact sums, reading orally in context, reading orally a list of irregular words, orally reading phonetically regular words.

For other skills, where fluency is not of primary concern, accuracy criteria might be appropriate.

> Accuracy might be used as a criterion for behaviors like spelling words, answering comprehension questions, or tracing letters.

c) how can I determine appropriate rate criteria?

Determining an appropriate rate criterion or aim rate is often challenging. However, there are several procedures you can use:

1. Base the criterion on the student's own optimum rate on a similar skill. For example, on add facts with sums to 5, Hank appears to have reached a level of proficiency and can write sums with 50 correct per minute. You are not teaching add facts, sums to 10. Use past performance to guide rate selection. Because writing sums to 10 involves more numeral formation, try selecting a rate slightly below the previous rate (45 sums in a minute). In the same way, you can use a child's oral reading rate in a book at the independent reading level as an indication of a desired rate in more difficult material.

2. Use past experience with other children to determine rates. When children in your resource room were able to read 40 CVCe words (lake, pine) with no errors, they appeared quite proficient with that skill. This rate can then serve as a guideline for children currently learning that skill.

3. Many teachers in mainstreaming situations are using rates of peer classmates to help determine rates. A sample of children from the regular class perform the desired skill (e.g., say sounds), and an average rate for the regular classroom children is computed. This rate is used in selecting a performance standard.

Can criteria be adjusted? Of course! The criterion you set represents your "best guess" at a level that will indicate proficiency.

Occasionally you will find children who do not seem to retain skills even though they have met the desired criterion in the past. This indicates that the criterion may not be high enough...that overlearning of the skill did not occur. When this happens, try adjusting the criterion upward (from 90% accuracy to 95%, from 30 words/min. to 40 words/min.), or increase the number of days the child demonstrates the desired behavior. For example, if your original objective allowed the child to move to a new skill after one day at criterion, you may wish to increase the number of days to three.

Occasionally, a criterion may be too high. The child's performance appears very proficient to you, but s/he has not yet reached the criterion set in the objective. If this continues, a downward adjustment is possible. However, don't lower the standard just to speed up movement. Be sure that the child is really proficient at the skill. If you do lower a criterion, measure the behavior on an intermittent basis during the following weeks. Is the child retaining the skill? If the behavior drops out of the student's repertoire, a higher criterion may be necessary to guarantee retention.

3. sequence teaching-learning skill steps

As the designated program implementer, it is your job to establish instructional sequences that lead to mastery of the long term goals.

The first step is to convert each long term goal into a long term objective by rewriting the goal in behavioral terms. Next, determine a logical series of teaching-learning steps that lead from the student's current performance level to the long term objective.

Many children cannot acquire new information unless it is presented in small components. Progress will be greater if new skills are presented in small increments, where each step builds on past learning. Careful sequencing maximizes the probability of successful learning.

A sequence refers to a listing of teaching-learning steps that lead to the desired long term objective. These steps must be ordered logically, gradually leading to the desired outcome. Each step is a successive approximation of the long term objective.

Developing Sequences

There are two major ways to establish a sequence of skills:

1. extract a sequence from established material, or
2. generate your own sequence of skills.

Extracting a sequence is particularly appropriate if you are unfamiliar with the academic area or if you have well-sequenced material you would like to use as the basis of your instructional program. Extracting sequences from instructional materials also saves time. Authors of commercial materials have spent a great deal of time and energy designing instructional sequences.

Though commercial sequences are not perfect, if you extract a sequence you have a basis on which to make alterations.

When extracting the sequence steps, begin with the long term objective. What is the outcome behavior? What materials are currently available that lead to performance of this behavior? Which of the available materials seem, at first glance, to progress in the most logical fashion? From your long term objective, select an instructional material. Then derive a sequence from the material.

DERIVING A SEQUENCE FROM EXISTING MATERIAL:

1. **Select a material and a single strand within that material.**

   For example, if the material is in the area of math, it might cover a number of strands (time telling, addition, money, numeral naming, etc.). Select the strand you are most interested in. A sequence should focus on only one strand.

2. **Go through the material and list each new step introduced.**

   Don't rely on the table of contents. Look carefully at the material and write down each sequential step.

3. **Examine the sequence carefully.**

   Are there gaps in the sequence? Are some steps too small, or too large? Are some steps missing?

4. **"Fix up" the sequence to meet the needs of the student.**

   If there are gaps or missing steps in the sequence, write in additional, appropriate steps. If the steps seem too large, slice back the steps.

Let's take one of Terry's long term goals as an example:

> "Will decode phonetically regular one-syllable words."

In formulating the skills sequence, you may want to use a sequence found in one of the classroom materials. After examining a number of materials, Terry's teacher selected the skill sequence from Patterns, Sounds and Meaning (Allyn & Bacon, Inc.), a supplementary word recognition workbook series.

After selecting this material, the teacher extracted the sequence by going through the material page by page, writing down each new behavior demanded of the child. The following list of skills was produced:

Entry Skills: initial consonant phoneme-grapheme associations for:
s,m,g,b,f,d,h,w,n,p,t,j,r,l,k,c,v,y

final consonant phoneme-grapheme associations for:
d,m,s,g,l,t,b,k,n

initial digraphs, and final digraphs
sh,th,wh,ch

Sequence:

Short Vowels:
- decodes CVC words with a
- decodes CVC words with i
- decodes CVC words with o
- decodes CVC words with e
- decodes CVC words with u

CVCC Words:
- decodes CVCC words with ll, ss
- decodes CVCC words with nk, sk
- decodes CVCC words with nd, ng
- decodes CVCC words with nt, st, mp

Final e Pattern:
- decodes CVCE words with a
- decodes CVCE words with o
- decodes CVCE words with i
- decodes CVCE words with u

Vowel Digraphs:
- decodes CVVC words with ee, ea
- decodes CVVC words with ai, ay
- decodes CVVC words with oa

Vowel Pattern igh, y:
- decodes one-syllable words with igh
- decodes one-syllable words with final y /i/

CCVC Pattern:
- decodes words with previously-taught vowel patterns with initial r blends
- decodes words with previously-taught vowel patterns with initial s blends
- decodes words with previously-taught vowel patterns with initial l blends

R-Controlled Vowels:
- decodes one-syllable words with ar
- decoees one-syllable words with or
- decodes one-syllable words with er
- decodes one-syllable words with ir
- decodes one-syllable words with ur

Multiple Phonemes:
- decodes 1-syllable words using two sounds for c (/k/ and /s/)
- decodes 1-syllable words using two sounds for g (/j/ and /g/)
- decodes 1-syllable words using three sounds for y (/e/, /i/, and /y/)

Vowel Pairs:
- decodes 1-syllable words with two sounds for oo
- decodes 1-syllable words with two sounds for ou
- decodes 1-syllable words with two sounds for ow
- decodes 1-syllable words with ei
- decodes 1-syllable words with ie
- decodes 1-syllable words with -all
- decodes 1-syllable words with aw and au

Schwa Sounds:
- deleted

Diphthongs:
- decodes 1-syllable words with oi
- decodes 1-syllable words with oy

Silent Double Consonants:
- decodes 1-syllable words with silent double letters: kn, wr, gn, st, mb, bt, rh, lm, gl, mn

Notice that the sequence begins by stating the necessary entry behaviors demanded by the first step in the sequence. These entry behaviors should be stated for each instructional skills sequence established.

Entry behaviors together with the long term objective form the parameters for the sequence. Before beginning instruction on the first sequential step, check to see that the child has the necessary entry behaviors.

As stated in the performance assessment information on the IEP, Terry has already mastered the initial consonants and final consonants. We need to check Terry's skill with consonant digraphs prior to beginning instruction on this sequence.

** CHECK POINT **

Select a material from your classroom that you use frequently and that appears to have a logical ordering of behaviors/skills.

Following the procedures described, extract the sequence from the material. Then, evaluate the sequence using the following criteria.

(1 = very poor, and 4 = excellent)

Rating:	Evaluative question:
1 2 3 4	a. The sequence progresses in small steps.
1 2 3 4	b. The sequence moves from least complex to most complex.
1 2 3 4	c. The sequence begins with frequently-used skills and moves to less frequently-used skills.
1 2 3 4	d. The sequence gradually builds on past learning.
1 2 3 4	e. The sequence groups together similar elements where it would facilitate generalizations (e.g. short vowels are taught in close proximity).
1 2 3 4	f. When discrimination between elements is difficult, the sequence separates the elements (e.g. b from d, /i/ from /e/).
1 2 3 4	g. The sequence does not have any "gaps" between sequence steps.

You now have an extracted sequence from a commercial material. Next, examine the sequence to determine if there are any "gaps" in the sequence or any steps that are too large. Here's an example taken from a math series.

solves addition problems
2-digit + 2-digit with regrouping

solves addition problems
3-digit + 3-digit with regrouping

solves addition problems
4-digit + 4-digit with regrouping

What's wrong with this sequence? There are several problem types missing in this sequence. Many children could not proceed at this rapid pace through addition with regrouping. Additional steps need to be provided to fill the "gaps" in this instructional sequence. The following steps might be added.

2-digit + 2-digit with regrouping

3-digit + 1-digit with regrouping
3-digit + 2-digit with regrouping
3-digit + 3-digit with regrouping

4-digit + 1-digit with regrouping
4-digit + 2-digit with regrouping
4-digit + 3-digit with regrouping
4-digit + 4-digit with regrouping

Many sequences found in commercial materials have "gaps" between steps, or use very large steps. Though many children in the regular classroom may be able to handle a great deal of information at one time, many handicapped children need instruction which is "sliced back" into smaller steps. For example, the following steps, found in a phonics workbook, can be "sliced back" to a number of sequential steps.

decodes CVC words with all short vowels

decodes CVCE words with all vowels

decodes CVC words with short a

decodes CVC words with short i

decodes CVC words with short o

decodes CVC words with short e

decodes CVC words with short u

decodes CVC words with all short vowels

** CHECK POINT **

For the following sequences, add additional steps that would increase their usefulness for instruction for exceptional children.

Sequence found in material:	Altered sequence:
A. Solves 2-digit minus 2-digit problems, no regrouping.	
Solves 3-digit minus 3-digit problems with regrouping.	
B. Decodes CVVC words with all long vowel digraphs.	

Evaluate your altered sequences:

Did you fill in necessary gaps in the first sequence?

Did you "slice back" the second sequence into a number of sequential steps?

Why extract the sequence from materials I intend to use for instruction?

Extracting the sequence not only provides you a comprehensive review of the material's format and content, but provides direction for your instruction.

When you have the instructional sequence in front of you, you know where you are going and the steps you will use to get to that point.

If the child has not mastered the skill step, but the materials offer no practice material, you will not be tempted to move to the next step before reaching mastery. Instead, you will probably supplement the materials with additional instruction, teacher-made practice activities, or activities taken from similar materials.

How can the instructional sequence be used?

Instructional sequences can serve as a basis for informal assessment designed to determine starting points in the sequence.

To form an informal placement test, simply select items that could be used to measure each sequence step. Order these items in the same order as the instructional sequence. Administer the assessment tool to the child, and determine an appropriate starting point for that child. The following assessment tool was derived from a math sequence.

Sequence Step:	Items on Assessment:	
2-digit + 1-digit regroup to tens	33 9	47 8
2-digit + 2-digit regroup to tens	39 27	24 38
3-digit + 1-digit regroup to tens	436 8	275 6
3-digit + 1-digit regroup to tens and to hundreds	498 9	594 9
3-digit + 2-digit regroup to tens	639 25	728 36
3-digit + 2-digit regroup to hundreds	572 84	663 86
3-digit + 2-digit regroup to all columns	467 99	876 48

** CHECK POINT **

Using the sequence of skills extracted from Patterns, Sounds and Meaning , write an assessment tool for placement into the sequence. This will involve selecting words that follow each sequential step. The student will orally read these words, and you will record errors.

Sequence Step:	Items appearing on Assessment:
decodes CVC words with a	
decodes CVC words with i	
decodes CVC words with o	
decodes CVC words with e	
decodes CVC words with u	
decodes CCVC words ll, ss	
decodes CCVC words nk, sk	
decodes CCVC words nd, ng	
decodes CCVC words nt, st, mp	
decodes CVCE words with a	
decodes CVCE words with o	
decodes CVCE words with i	
decodes CVCE words with u	

Evaluate your assessment tool:

Did you provide items that directly measure target behaviors?

Did you provide enough items to be sure of the student's skills?

Did you control for all elements in the words?

Did you use words that would NOT be common sight vocabulary for the student?

Sequences are also useful in monitoring and recording child progress. The following sequence has been redesigned to form a record of progress. It includes the criterion for movement, the date instruction began, the date of mastery, the initial and final performance of the child. Though daily data would be collected on this behavior, the form serves as a summary of progress, and communicates information to the regular classroom teacher and to parents.

CHILD SUAN ARCHER TEACHER Molly Hill SCHOOL Lakeside

LONG TERM OBJECTIVE When orally given the name of letter, SUAN will be able to write the letter with correct alignment and formation for two days in a row.

SEQUENCE STEP	Date Begun	Date Mastered
Can write manuscript letter i.	9/8/77	9/14/77
Can write manuscript letter t.	9/15/77	9/20/77
Can write manuscript letter l.	9/22/77	9/27/77
Can write manuscript letter v.	10/2/77	10/5/77
Can write manuscript letter w.	10/5/77	10/8/77
Can write manuscript letter z.		
Can write manuscript letter k.		
Can write manuscript letter o.		
Can write manuscript letter s.		
Can write manuscript letter c.		
Can write manuscript letter e.		
Can write manuscript letter a.		
Can write manuscript letter d.		
Can write manuscript letter q.		
Can write manuscript letter g.		
Can write manuscript letter r.		
Can write manuscript letter n.		
Can write manuscript letter m.		
Can write manuscript letter h.		
Can write manuscript letter b.		
Can write manuscript letter p.		
Can write manuscript letter u.		
Can write manuscript letter y.		
Can write manuscript letter j.		

Occasionally you may wish to generate your own instructional sequences. The following procedures can be used in writing your own sequences.

A. Specify the terminal goal.

B. Specify the entering behaviors needed before beginning the sequence.

C. List steps leading to the goal.

1. Shotgun method: Write down all the elements you think would be covered under a specific skill area. This can be done when brainstorming with another person.

Example: Short Vowels - a, i, e, o, u.
Colors - red, blue, green, yellow, purple, brown, black, white.
Punctuation - period, question mark, exclamation point, commas, quotation marks.

2. Research method: Look at established materials to determine elements often defined under a specific skill area.

D. Sequence component elements.

1. Order elements in the order in which you wish to teach. Because skill areas may not be developmental in nature, the sequence may be arbitrary. Here are a few rules:

a. Begin with the least complex and move to the most complex.

b. Begin with the most frequent element and move to the least frequent element.

c. If discrimination between the elements is difficult, separate them in the teaching sequence.

d. If there is some similarity between elements that would assist in learning, group those elements together.

Can the same instructional sequence be used for more than one child?	Certainly. The sequence is based on careful analysis of the skill to be taught with components organized in a logical order. For this reason, sequences of basic skill will be appropriate for many children. You may need to alter the conditions under which the behavior will be measured or the desired performance standard.

The following addition fact sequence was adapted to two boys receiving math instruction in a special education resource room. Note that different starting places in the sequence were selected based on assessment data.

Also, alternate observable behaviors were selected by the teacher. John has a great deal of difficulty writing, so his teacher allows him to say the sums when a flash card is presented. Tim is able to write numerals and his performance is measured through writing sums on a probe sheet.

The criteria for mastery also differ. John is working for accuracy and must say facts with 100% accuracy. Tim has a proficiency criterion, writing 40 sums per minute with no more than 2 errors.

CHILD John TEACHER Ms. Archer

ADDITION FACTS (single digit plus single digit sums to 18 or less)

Entry behaviors needed:

Names numerals to 18

Associates number with numeral

Understands combining of sets

Writes numerals to 18

CONDITIONS: When presented with 25 flash cards with the addition fact.
BEHAVIOR: John will orally say sum.
STANDARD: 100% accuracy

Addition facts: Sequence (single digit plus single digit sums less than 18)

		DATE BEGUN	DATE MASTERED
	1. Sums to 0 and 1		
	2. Sums to 0, 1, 2		
BEGIN HERE	3. Sums to 1, 2, 3		
	4. Sums to 2, 3, 4		
	5. Sums to 3, 4, 5		
	*6. Review sums to 5		
	7. Sums to 4, 5, 6		
	8. Sums to 5, 6, 7		
	9. Sums to 6, 7, 8		
	10. Sums to 7, 8, 9		
	11. Sums to 8, 9, 10		
	*12. Review sums to 10		
	13. Sums to 9, 10, 11		
	14. Sums to 10, 11, 12		
	15. Sums to 11, 12, 13		
	16. Sums to 12, 13, 14		
	17. Sums to 13, 14, 15, 16		
	18. Sums to 15, 16, 17, 18		
	*19. Review of sums 18		

CHILD Tim TEACHER Ms. Archer

ADDITION FACTS (single digit plus single digit sums to 18 or less)

Entry behaviors needed:

Names numerals to 18

Associates number with numeral

Understands combining of sets

Writes numerals to 18

CONDITIONS: When given a probe sheet with 100 addition facts with given problem type.
BEHAVIOR: Will write sum.
STANDARD: 40 sums per minute with nor more than 2 errors, for two consecutive days.

Addition facts: Sequence (single digit plus single digit sums less than 18)

	DATE BEGUN	DATED MASTERED
1. Sums to 0 and 1		
2. Sums to 0, 1, 2		
3. Sums to 1, 2, 3		
4. Sums to 2, 3, 4		
5. Sums to 3, 4, 5		
*6. Review sums to 5		
BEGIN HERE - 7. Sums to 4, 5, 6		
8. Sums to 5, 6, 7		
9. Sums to 6, 7, 8		
10. Sums to 7, 8, 9		
11. Sums to 8, 9, 10		
*12. Review sums to 10		
13. Sums to 9, 10, 11		
14. Sums to 10, 11, 12		
15. Sums to 11, 12, 13		
16. Sums to 12, 13, 14		
17. Sums to 13, 14, 15, 16		
18. Sums to 15, 16, 17, 18		
*19. Review of sums 18		

4. translate each sequence step into a short-term objective

The sequence examples in this paper have not been written as short term objectives. They have simply listed sequential child behaviors. The next step is to convert these sequences into short term objectives.

This means you'll be adding the components of a behavioral objective:

the learner

the observable behavior

the conditions

the standard or criterion

Using Terry's sequence for decoding phonetically-regular words, this can be done:

Sequence step:	Short Term objective:
CVC, short a	Given a probe sheet with 100 CVC words with short vowel a, Terry reads orally with 50 words correct per min., and 2 errors.
CVC, short i	Given a probe sheet with 100 CVC words with short vowel i Terry reads orally with 5o words correct per min., and 2 errors.
CVC, short o G	Given a probe sheet with 100 CVC words with short vowel o, Terry reads orally with 50 words correct per min., and 2 errors.
CVC, short e	Given a probe sheet with 100 CVC words with short vowel e, Terry reads orally with 50 words correct per min., and 2 errors.
CVC, short u	Given a probe sheet with 100 CVC words with short vowel Terry reads orally with 50 words correct per min., and 2 errors.
CVC, all short vowels	Given a probe sheet with 100 CVC words with all short vowels, Terry reads orally with 50 words per min., correct, 2 errors.

As mentioned earlier, you may want to use an abbreviated form, such as one of the following, for translating sequence steps into short term objectives.

CHILD Terry Smith TEACHER Fred Harris SCHOOL Ashland

LONG TERM OBJECTIVE When given a list of 50 words, with inflectional endings ing, ed, s, mixed with noninflected words, Terry will read words orally with 95% accuracy. (note: roots will be phonetically regular)

CONDITIONS	BEHAVIOR	STANDARD	DATE BEGUN	DATA	DATE MASTERED	DATA
s probe all roots	says 50 words	95%	9-21-77	80%	9-23-77	96%
ing probe unaltered roots	"	"	9-24-77	60%	9-27-77	100%
ed probe unaltered roots	"	"	9-29-77	90%	10-1-77	96%
s, ing, ed probe unaltered roots	"	"	10-1-77	64%	10-5-77	100%
ing probe double consonant roots (batting)	"	"	10-6-77	30%	10-15-77	100%
ed probe double consonant roots (skipped)	"	"	10-16-77	84%	10-19-77	100%
ing, ed probe double consonant roots	"	"	10-19-77	90%	10-20-77	100%
ing, ed probe with final e roots (baking)	"	"	10-22-77	28%	11-1-77	100%
ed probe with final y roots (tried)	"	"	11-2-77	10%	11-7-77	96%
ing, ed, s probe all root types	"	"	11-9-77	92%	11-11-77	100%

CHILD _____ TEACHER _____ SCHOOL _____

LONG TERM OBJECTIVE _____

CONDITIONS	BEHAVIOR	STANDARD	DATE BEGUN	DATA	DATE MASTERED	DATA

Under Public Law 94-142, the program implementer (after receiving the long term goals) is responsible for establishing an instructional sequence of short term objectives that lead to the long term goal. Either of the previous formats can be used in establishing an Instructional/Implementation Plan.

INDIVIDUAL EDUCATION PROGRAM
Instructional/Implementation Plan

Student Name: Terry Smith I/IP for Skill Area: Math

School: Ashland Special Education Program and/or Related Service:

Teacher: Sally Snyder Date of I/IP: 9-21-77 Special ed. resource room

Long-term Program Goal (from Total Service Plan):
Will be able to solve 3-digit minus 3-digit problems with regrouping

Student has/has not reached long-term goal: Date 5-15-78

SHORT-TERM INSTRUCTIONAL OBJECTIVES
(in sequence of estimated achievement)

Date Begun	Target Completion Date	Objectives: Behavior	Objectives: Conditions	Mastery Criteria	Mastery Date
12-2-77	12-12-77	Write answer	25 2-digit minus 2-digit, no regrpg	complete in 5 min., 96% accuracy	12-10-77
12-11-77	12-16-77	Write answer	25 2-digit minus 2-digit, no regrpg		12-17-77
12-17-77	1-3-77	Write answer	25 3-digit minus 1 digit, no regrpg		1-5-78
1-6-78	1-11-78		5 3-digit minus 2-digit, no regrpg		1-10-78
1-11-78	1-15-78		25 3-digit minus 3-digit, no regrpg		1-15-78
1-16-78	1-25-78		25 2-digit minus 1-digit, regrpg		1-27-77
1-28-77	2-5-78		25 2-digit minus 2-digit, regrpg		2-6-78
2-7-78	2-13-78		25 3-digit minus 1-digit, regrpg with no medial zeros		2-14-78
2-15-78	2-20-78		25 3-digit minus 2-digit, regrpg with no medial zeros		2-23-78

continued . . .

INDIVIDUAL EDUCATION PROGRAM
Instructional/Implementation Plan

Student name: _____ IIP for skill area: _____

School: _____ Special Ed. Program/Rel. Services: _____

Teacher: _____ Date of IIP: _____

Long term Program Goal (from Total Service Plan):

Student has/has not reached long-term goal. Date: _____

SHORT-TERM INSTRUCTIONAL OBJECTIVES
(in sequence of estimated achievement)

Date Begun	Target Completion Date	Objectives		Mastery Criteria	Mastery Date
		Behavior	Conditions		

* * CHECK POINT * *

Using the following IIP form designed for use in Idaho, write an Instructional/Implementation Play for Terry. Use the sequence extracted from the phonics workbook. The long term goals for which you are to write an IIP is:

> Terry will decode phonetically regular one-syllable words.
>
> Terry will decode words with common inflectional endings.

questions/answers

Q. WHERE CAN I FIND SEQUENCES WHICH HAVE ALREADY BEEN DEVELOPED? IT SEEMS THAT WOULD BE EASIER THAN DEVELOPING MY OWN.

A. You're right. If you can find sequences which have already been developed, and which meet your needs, by all means use them. Some sources you might try include published curriculum materials, published management systems, special projects, federally and state-funded grants, school districts, and universities. Or, try the State Department of Education.

Q. CAN THE SAME SEQUENCE BE USED FOR MORE THAN ONE STUDENT?

A. Certainly. As a matter of fact, using a basic skill sequence, which is then modified to meet each child's individual needs seems to be a very efficient way of managing individualized instruction. For each child, then, make modifications in the sequence as necessary. You might, for example, end up combining some steps for some students, slicing back some steps, adding steps, or deleting steps, depending upon the individual child in question. Yes. the same sequence, with appropriate modifications, can be used for more than one student.

Q. WHY ALL THIS "FUSS" OVER WRITING BEHAVIORAL OBJECTIVES?

A. Because translating sequence steps into short term objectives is an way for teachers to tackle some of the instructional decisions which must be made for programming, and because short term objectives clearly specify, for all concerned, precisely what is expected of the student, and exactly what it is the student must do to demonstrate that he or she has mastered the target skills. Behavioral objectives provide, in a concise form, lots of information about instruction, including:

what particular skill is being assessed? (the conditions)
who is going to be performing? (the student or learner)
what is the student going to do? (the observable behavior)
at what level is the student going to do it? (the criterion)

Q. HOW DO I DECIDE WHETHER TO USE A RATE OR ACCURACY STANDARD IN THE CRITERIA FOR MY BEHAVIORAL OBJECTIVES?

A. Good question, and one which puzzles many teachers. Try studying the task or skill you are asking the student to perform. Think about how that task will be used, as a stepping stone to other tasks, or as a functional life skill, etc. Then, try to decide whether the critical factor for the target skill is just being able to do it correctly (accuracy) or being able to do it both correctly and fluently (rate). If only correctness if critical, try using an accuracy criteria. If both correctness and speed, or fluency are important, use a rate criteria.

appendices

a. SAMPLE FORMS FOR USE IN WRITING SHORT TERM OBJECTIVES

b. TEACHER-GENERATED SAMPLE SKILL SEQUENCES FOR SELECTED SKILLS

INDIVIDUAL EDUCATION PROGRAM
Instructional/Implementation Plan

Student Name:_____ I/IP for Skill Area_____

School:_____ Special Edication Program and/or Related Service:

Teacher:_____ Date of I/IP:_____ _____

Long-term Program Goal(From Total Service Plan):

Student has/has not reached long-term goal: Date:

SHORT-TERM INSTRUCTIONAL OBJECTIVES
(in sequence of estimated achievement)

Date Begun	Target Completion Date	OBJECTIVES Behavior	Conditions	Mastery Criteria	Mastery Date

Material: _____ Developer: _____

Level: _____

Sequence Steps	Short Term Objectives				Measurement Criteria
	who (learner)	will do what (observ. behavior)	in what setting/stimulus (conditions)	at what level (standard)	

Student: _____ Teacher: _____ School: _____

ng Term Objective: _____

_____

CONDITIONS	BEHAVIOR	STANDARD	Date Begun	Data	Date Mastered	Data

Page __ of __

STUDENT: _____ Starting Date: _____

Teacher: _____

Long Term Objective:

Short Term Objective #1:

Short Term Objective #2:

Short Term Objective #3:

Short Term Objective #4:

Short Term Objective #5:

Short Term Objective #6:

Short Term Objective #7:

Short Term Objective #8:

Short Term Objective #9:

SKILL: ROTE COUNTING 1-10

Entry Skills: repeats from memory a series of 3 objects
pronounces the name of numerals

Sequence Steps:

1. teacher counts 1-9, student provides 10
2. teacher counts 1-8, student provides 9, 10
3. teacher counts 1-7, student provides 8, 9, 10
4. teacher counts 1-6, student provides 7, 8, 9, 10
5. teacher counts 1-5, student provides 6, 7, 8, 9, 10
6. tchr. counts 1-4, student provides 5-10
7. tchr. counts 1-3, student provides 4-10
8. tchr. counts 1-2, student provides 3-10
9. tchr. counts 1, student provides 2-10
10. student counts 1-10

SKILL: ADDITION FACTS: single digit + single digit sums to 18

Entry skills:

names numerals to 18
associates number with numeral
combines sets
writes numerals to 18

Sequence Steps:

1. sums 0, 1
2. sums 0, 1, 2
3. sums 1, 2, 3
4. sums 2, 3, 4
5. sums 3, 4, 5
6. review: sums to 5
7. sums 4, 5, 6
8. sums 5, 6, 7
9. sums 6, 7, 8
10. sums 7, 8, 9
11. sums 8, 9, 10
12. review: sums to 10
13. sums to 9, 10, 11
14. sums to 10, 11, 12
15. sums to 11, 12, 13
16. sums to 12, 13, 14
17. sums to 13, 14, 15
18. sums to 15, 16, 17, 18
19. review: sums to 18

SKILL: SUBTRACTION FACTS: minuend to 18
subtrahend to 9

Entry Skills:

names numerals to 18
associates number to numeral
takes sets apart
writes numerals to 9
solves addition facts

Sequence Steps:

1. minuend of 0, 1, 2
2. minuend of 1, 2, 3
3. minuend of 2, 3, 4
4. minuend of 3, 4, 5
5. minuend of 0 to 5: review
6. minuend of 4, 5, 6
7. minuend of 5, 6, 7
8. minuend of 6, 7, 8
9. minuend of 7, 8, 9
10. minuend of 8, 9, 10
11. minuend of 0 to 10: review
12. minuend of 9, 10, 11
13. minuend of 10, 11, 12
14. minuend of 11, 12, 13
15. minuend of 12, 13, 14
16. minuend of 13, 14, 15
17. minuend of 14, 15, 16
18. minuend of 15, 16, 17
19. minuend of 11 to 18: review
20. minuend of 0 to 18: review

SKILL: MULTIPLICATION FACTS: single digit x single digit

Entry Skills:

names numerals to 81
associates number to numeral
recognizes quantities
writes numerals to 81
solves addition facts

Sequence Steps:

1. n x 0 or 0 x n
2. n x 1 or 1 x n
3. n x 2 or 2 x n
4. n x 3 or 3 x n
5. n x 4 or 4 x n
6. n x 5 or 5 x n
7. review all steps: facts through x 5
8. n x 6 or 6 x n
9. n x 7 or 7 x n
10. n x 8 or 8 x n
11. n x 9 or 9 x n
12. reveiw all steps: facts through x 9

SKILL: DIVISION FACTS: one digit into one or two digits with one-digit quotient, no remainder; inverse of multiplication facts

Entry Skills:

names numerals to 81
associates number with numeral
takes sets apart
writes numerals to 100
solves multiplication facts (optional)

Sequence Steps:

1. divisor of 1
2. divisor of 2
3. divisor of 3
4. divisor of 4
5. divisor of 5
6. review of facts with divisors 1 to 5
7. divisor of 6
8. divisor of 7
9. divisor of 8
10. divisor of 9
11. review of facts with divisors 1 to 9

SKILL: ADDITION COMPUTATION

Entry Skills: see Addition Facts

Sequence Steps:

1. 2-digit + 1-digit, no regrouping
2. 2-digit + 2-digit, no regrouping
3. 3-digit + 1-digit, no regrouping
4. 3-digit + 2-digit, no regrouping
5. 3-digit + 3-digit, no regrouping

6. addition of three 1-digit numbers, sums to 10
7. addition of four 1-digit numbers, sums to 10

8. 2-digit + 1-digit, regroup to the tens
9. 2-digit + 2-digit, regroup to the tens
10. 3-digit + 1-digit, regroup to the tens

11. 3-digit + 1-digit, regroup to tens and hundreds
12. 3-digit + 2-digit, regroup to tens
13. 3-digit + 2-digit, regroup to hundreds
14. 3-digit + 2-digit, regroup to all columns
15. 3-digit + 3-digit, regroup to tens
16. 3-digit + 3-digit, regroup to hundreds
17. 3-digit + 3-digit, regroup to all columns

18. addition of three 1-digit, sums greater than 10
19. addition of four 1-digit, sums greater than 10
20. addition of three 2-digit, no regrouping
21. addition of four 2-digit, no regrouping
22. addition of three 3-digit, no regrouping
23. addition of four 3-digit, no regrouping
24. addition of three varying digits, no regrouping

25. addition of three 2-digit, regrouping
26. addition of four 2-digit, regrouping
27. addition of three 3-ditit, regrouping
28. addition of four 3-digit, regrouping
29. addition of three with varying digits, regrouping

1. $43 + 2 = 45$
2. $34 + 25 = 59$
3. $421 + 3 = 424$
4. $863 + 34 = 897$
5. $603 + 295 = 898$
6. $2 + 3 + 1 = 6$
7. $4 + 0 + 1 + 2 = 7$
8. $33 + 9 = 42$
9. $39 + 27 = 66$
10. $436 + 8 = 444$
11. $498 + 9 = 507$
12. $639 + 25 = 664$
13. $572 + 84 = 656$
14. $467 + 99 = 566$
15. $37 + 25 = 62$
16. $492 + 285 = 777$
17. $549 + 783 = 1337$

SKILL: SUBTRACTION COMPUTATION

Entry Skills: see Subtraction Facts

Sequence Steps:

1. 2-digit minus 1-digit, no regrouping
2. 2-digit minus 2-digit, no regrouping
3. 3-digit minus 1-digit, no regrouping
4. 3-digit minus 2-digit, no regrouping
5. 3-digit minus 3-digit, no regrouping

6. 2-digit minus 1-digit, regroup from tens
7. 2-digit minus 2-digit, regroup from tens
8. 3-digit minus 1-digit, regroup from tens
9. 3-digit minus 1-digit with zero in tens place, regroup from tens and from hundreds
10. 3-digit minus 2-digit, regroup from tens
11. 3-digit minus 2-digit, regroup from hundreds
12. 3-digit minus 2-digit, (no zeros in tens)
13. 3-digit minus 2-digit, with zero in tens, regr
14. 3-digit minus 3-digit, regroup from tens
15. 3-digit minus 3-digit, regroup from hundreds
16. 3-digit minus 3-digit, regroup (no zeros in te
17. 3-digit minus 3-digit with zero in tens place of minuend, regroup

1. $24 - 3 = 21$
2. $49 - 28 = 21$
3. $429 - 7 = 422$
4. $875 - 34 = 841$
5. $987 - 624 = 363$
6. $42 - 9 = 33$
7. $56 - 28 = 28$
8. $396 - 9 = 387$
9. $908 - 9 = 899$
10. $472 - 39 = 433$
11. $423 - 92 = 331$
12. $472 - 96 = 376$
13. $506 - 97 = 409$
14. $472 - 349 = 123$
15. $527 - 153 = 374$
16. $722 - 379 = 343$
17. $507 - 279 = 228$

SKILL: DIVISION COMPUTATION

Entry Skills: see Division Facts

Sequence Steps:

1. 1-digit into 2-digit, 1 subtraction with remainder
2. 1-digit into 2-digit, 2 subtractions, no remainder
3. 1-digit into 2-digit, 2 subtractions with remainder
4. 1-digit into 3-digit, 2 subtractions, no remainder
5. 1-digit into 3-digit, 2 subtractions with remainder
6. 1-digit into 3-digit, 3 subtractions, no remainder
7. 1-digit into 3-digit, 3 subtractions with remainder
8. 2-digit into 2-digit, 1 subtraction, no remainder
9. 2-digit into 2-digit, 1 subtraction with remainder
10. 2-digit into 3-digit, 1 subtraction, no remainder (usually more difficult to estimate product)
11. 2-digit into 3-digit, 1 subtraction, remainder
12. 2-digit into 3-digit, 2 subtractions, no remainder
13. 2-digit into 3-digit, 2 subtractions, remainder

1. $2\overline{)19}$ = 9 r.1 (18; 1)
2. $3\overline{)72}$ = 24 (6; 12; 12)
3. $3\overline{)59}$ = 19 r.2 (3; 29; 27; 2)
4. $3\overline{)65}$ = 21 r.2 (6; 5; 4; 1)
5. $8\overline{)290}$ = 36 r.2 (24; 50; 48; 2)
6. $8\overline{)984}$ = 123 (8; 18; 16; 24; 24)
7. $4\overline{)537}$ = 134 r.1 (4; 13; 12; 17; 16; 1)
8. $15\overline{)30}$ = 2 (30)
9. $42\overline{)89}$ = 2 r.5 (84)
10. $23\overline{)207}$ = 9 (207)
11. $42\overline{)254}$ = 6 r.2 (252; 2)
12. $45\overline{)945}$ = 21 (90; 45; 45)
13. $24\overline{)935}$ = 38 r.23 (72; 215; 192; 23)

SKILL: MULTIPLICATION COMPUTATION

Entry Skills: see Multiplication Facts, Addition Facts

Sequence Steps:

1. 1-digit x 2-digit, no regrouping
2. 1-digit x 3-digit, no regrouping
3. 1-digit x 4-digit, no regrouping
4. 1-digit x 2-digit, regrouping
5. 1-digit x 3-digit, regrouping
6. 1-digit x 4-digit, regrouping
7. 2-digit x 2-digit, no regrouping
8. 2-digit x 2-digit, regrouping
9. 2-digit x 3-digit, no regrouping
10. 2-digit x 3-digit, regrouping
11. 3-digit x 3-digit, no regrouping
12. 3-digit x 3-digit, regrouping

1. 24 x 2 = 48
2. 320 x 3 = 960
3. 2402 x 2 = 4804
4. 46 x 3 = 138
5. 345 x 5 = 1725
6. 1570 x 5 = 52850
7. 33 x 21 = 33 + 66 = 693
8. 43 x 84 = 172 + 344 = 3614
9. 430 x 21 = 430 + 860 = 9030
10. 532 x 27 = 3724 + 1064 = 14364
11. 402 x 211 = 402 + 402 + 804 = 84822
12. 426 x 385 = 2130 + 3408 + 1278 = 1304010

SKILL: MONEY

Entry Skills: count by 1, 5, and 10 to 100

Sequence Steps:

Steps 1-6 include, for each step:
- a. Match coin to coin with 1 or 2 coin distractors.
- b. Match coin to coin with all coins as distractors.
- c. Match front side of coin with back side.
- d. Identify coin from 1 or 2 coin distractors.
- e. Identify coin from all coins as distractors.
- f. Name coin verbally.

1. Penny.
2. Nickel.
3. Dime
4. Quarter
5. Half Dollar.

6. Says value of penny.
   - a. matches written value with penny
   - b. writes value for penny
7. Says value of nickel.
   - a. matches written value with nickel
   - b. writes value for nickel
   - c. Gives equivalent value in pennies.
8. Says value of dime.
   - a. matches written value with dime
   - b. writes value for dime
   - c. gives equivalent value in pennies.
   - d. gives equivalent value in nickels.
   - e. gives equivalent value in nickels and pennies.
9. Says value of quarter.
   - a. matches written value with quarter
   - b. writes value for quarter
   - c. gives equivalent value in pennies.
   - e. gives equivalent value in nickels.
   - f. gives equivalent value in pennies, nickels,dimes
10. Says value of half-dollar.
    - a. matches written value with half dollar
    - b. writes value for half dollar
    - c. gives equivalent value in pennies, nickels, dimes, and quarters
11. When given a set of coins, can tell which coin is of greatest value.

12. Counts pennies to 10 cents
13. Counts nickels to $1.00
14. Counts dimes to $1.00
15. Counts quarters to $1.00
16. Counts half dollars to $1.00
17. Counts values of coin and writes amount:
    - a. to 5 cents
    - b. to 10 cents
    - c. to 15 cents
    - d. to 20 cents
    - e. to 25 cents
    - f. to 30 cents
    - g. to 35 cents
    - h. to 40 cents
    - i. to 45 cents
    - j. to 50 cents
18. When given verbal or written cue, selects from group of coins exact amount with values:
    - a. to 5 cents
    - b. to 10 cents
    - c. to 15 cents
    - d. to 20 cents
    - e. to 25 cents
    - f. to 30 cents
    - g. to 35 cents
    - h. to 40 cents
    - i. to 45 cents
    - j. to 50 cents

19. Matches dollar to dollar
    - a. match dollar front and back
    - b. identify dollar
    - c. name dollar
    - d. says value of dollar
    - e. matches with written value
    - f. writes value using dollar sign and decimal
    - g. gives equivalent value in pennies, nickels, dimes, quarters, and half dollars
20. Counts values to coin and writes amount:
    - a. to 55 cents
    - b. to 60 cents
    - c. to 65 cents
    - d. to 70 cents
    - e. to 75 cents
    - f. to 80 cents
    - g. to 85 cents
    - h. to 90 cents
    - i. to 95 cents
    - j. to $1.00
21. Money addition:
    - a. adds sums less than 50 cents, no regrouping
    - b. adds sums less than $1.00, no regrouping
    - c. adds collar and cents, no regrouping
    - d. adds even dollars with cents
    - e. adds dollar and cents with regroup

22. Money Subtraction:
    a. subtracts money less than 50 cents, no regrouping
    b. subtracts money less than $1.00, no regrouping
    c. subtracts dollar and cents with no regrouping
    d. subtracts dollar and cents with regrouping
23. Counts dollar bills to $10.00
    a. counts five dollar bills to $20.00
    b. counts ten dollar bills to $50.00
24. Counts values of dollars and coins and writes amounts:
    a. to $2.00
    b. to $5.00
    c. to $10.00
    d. to $20.00
25. When given verbal or written cue, selects from group of coins and bills exact amount with values
    a. to $2.00
    b. to $5.00
    c. to $10.00
    d. to $50.00
26. Shows different combinations of coins and bills equalling the same amount:
    a. to $ .25
    b. to $ .50
    c. to $1.00
    d. to $2.00
    e. to $5.00
    f. to $10.00
    g. to $20.00
27. Makes change
    a. to $ .25
    b. to $ .50
    c. to $1.00
    d. to $2.00
    e. to $5.00
    f. to $10.00
    g. to $20.00
28. Advanced Money addition:
    a. adds sums to $9.99, no regrouping
    b. adds sums to $9.99 with regrouping
    c. adds sums to $99.99, no regrouping
    d. adds sums to $99.99 with regrouping
29. Advanced Money subtraction:
    a. subtracts sums less than $9.99, no regrouping
    b. subtracts sums less than $9.99 with regrouping
    c. subtracts sums less than $99.99, no regrouping
    d. subtracts sums less than $99.99 with regrouping

SKILL: TIME TELLING

Entry Skills: names numerals to 12
rote counts by 1's to 60 from any digit
rote counts by 5's to 60 from any interval

Sequence Steps:

1. Readiness for time telling:
    a. points to hour hand
    b. points to minute hand
    c. shows direction the hands move
    d. reads written times (10:45, 2:30)

Note: for steps 2-9, at each level the student:
    a. reads time when shown clock
    b. writes time when shown clock
    c. sets hands to given time from oral/written cue

2. Tells time to the hour.
3. Tells time to the 1/2 hour.
4. Tells time to the quarter hour (15 min.after the hr.)
5. Tells time to __:45 (45 min. after the hour)
6. Tells time to the 5 min. from 0-30 min.after the hr.)
7. Tells time to the 5 min.from 30-55 min.after the hr.)
8. Tells time to the min. from 0-30 min. after the hr.
9. Tells time to the min. from 31-59 min.after the hr.

10. Tells time to the 1/2 hr. using term "half-past"
    a. reads time on clock using "half-past" term
    b. sets hands on clock from written/oral cue of "half-past"
11. Tells time to __:15 using terms "quarter after:
    a. reads time when shown clock using "Quarter after"
    b. sets hands on clock from written/oral cue of "quarter after"
12. Tells time to __:45 using terms "quarter to/till"
    a. reads time on clock using "quarter to/till"
    b. sets hands on clock from written/oral cue of "quarter to/till"
13. Tells time to the min. from 0-30 min. after the hour using the terms __minutes "after, and __minutes "past" the hour
    a. reads time on clock using terms "past"&"after"
    b. sets time on clock from oral/written cue using "past" or "after" the hour
14. Tells time to the minute from 31-59 minutes after the hour using terms __minutes"to"and __minutes "before"the hour
    a. reads time on clock using terms "to" & "before" the hour
    b. sets time on clock from oral/written cue using "to" or "before" the hour

SKILL: PHONICS ANALYSIS- WORD ANALYSIS/STRUCTURAL ANALYSIS

Entry Skills: names letters (optional)

Sequence Steps:

1. says single consonant sounds
   a. initial position
   b. final position
   c. isolation
2. says consonant blends (l, r, s)
   a. two-letter blends
   b. three-letter blends
3. says consonant digraphs (sh,th,ch,wh)
4. says short vowel sounds
   a. in isolation
   b. CVC pattern (hat)
   c. CCVC pattern (slip)
   d. CVCC pattern (lost)
   e. closed syllable patterns
5. says long vowels
   a. in isolation
   b. in CVCE pattern (hate)
   c. in open syllable pattern (he)
6. says long vowel digraphs (ai, ay, oa, ee, ea)
7. says r-controlled vowels
8. says other vowel digraphs
9. says vowel diphthongs (oi, oy, aw, au,oo)
10. says l and w controlled vowels
11. says words with silent letters (mb, wr, kn)
12. says words with inflectional endings
    a. s, ed, ing, es
    b. er, est (comparisons)
    c. unaltered roots
    d. final consonant doubled
    e. final e dropped
    f. y changed to an i
13. says words with prefixes
14. says words with suffixes
15. says compound words
16. says words with possessive
    a. singular
    b. plural
    c. pronoun
    d. non-apostrophe
17. says contractions
18. says multi-syllable words
    a. VC/CV
    b. V/CV and VC/V
    c. -CLE
    d. affixes
    e. compound words
    f. odd patterns (V/V, etc.)
19. says words with accent

SKILL: COMPREHENSION SKILLS

Entry Skills: reads phonetically regular words
reads sight words
reads words in context

Sequence Steps:

1. literal thinking skills:
   a. recognition of explicitly stated
      1) details
      2) main idea
      3) sequential order
      4) relationships
         a) comparison/contrast
         b) cause and effect
   b. recall of explicitly stated
      1) details
      2) main idea
      3) sequential order
      4) relationships
         a) comparison/contrast
         b) cause and effect
   c. restatement of material/events
2. inferential thinking skills:
   a. infers main idea
   b. infers supporting details
   c. infers generalizations
   d. infers sequence
   e. infers relationships
      1) comparison/contrast
      2) cause and effect
   f. predicts outcomes
   g. extends ideas
   h. interprets figurative language
3. critical thinking skills:
   a. distinguishes real from fantasy
   b. distinguishes fact from opinion
   c. determines accuracy of material
      1) internal validity
      2) external validity
   d. determines author's purpose/bias
   e. detects use of propaganda devices
4. creative thinking skills:
   a. responds to author's viewpoint
   b. responds to author's style
      1) choice of words
      2) characters

SKILL: PREFIXES

Entry Skills: reads phonetically regular words
reads sight words

Sequence Steps:

1. decodes prefix in isolation
2. decodes word with prefix when root is from sight vocabulary
3. decodes word with prefix in context when root is from sight vocabulary
4. decodes word with prefix when root is phonetically regular
5. decodes word with prefix in context when root is phonetically regular
6. correctly uses prefix and adds prefix to root word from meaning in context

SKILL: SUFFIXES

Entry Skills: reads phonetically regular words
reads sight words

Sequence Steps: Same sequence applies for teaching:
a. adjective forming suffixes
b. noun forming suffixes
c. adverb forming suffixes (omit steps 5-9)

1. decodes suffix in isolation
2. decodes words containing suffix, root is structurally unaltered
3. decodes words containing suffix in context, root word is structurally unaltered
4. corrects form and uses correctly in context (both meaning and grammar correct) in words with suffixes where root is structurally unchanged
5. decodes words containing suffix in which letters are added to the root (slap-slapping)
6. decodes in context words containing suffix in which letters are added to root word
7. correctly forms (both meaning and grammar) in context words with suffixes in which letters are added to the root word
8. decodes words containing suffix in which last letter is deleted
9. decodes in context in which last letter in word is deleted before adding suffix
10. correctly forms (both meaning and grammar) suffixed words in context in which last letter of root has been deleted
11. decodes words when last letter of root is changed
12. decodes words in context in which last letter or root is changed
13. correctly forms words with suffixes (both meaning and grammar) in which the last letter of the root word is changed

SKILL: PRINTING MANUSCRIPT LETTERS

Entry Skills: holds pencil
makes/draws lines

Sequence Steps:

Teaching steps:

1. traces model of letter
2. traces over dotted-line model of letter
3. forms letter when model given with starting point
4. forms letter when model provided
5. forms letter, model given and quickly removed
6. forms letter to verbal cue (make an a)

Sequence of letters:

1. lower case letters
   a. straight line letters (i, l, t)
   b. straight and slant line letters (v, w, z, k)
   c. circle and line letters (o, s, c, e)
      (a, d, q, g)
      (r, n, m, h)
      (b, p, u, y, j)
2. upper case letters
   a. straight line letters (I, T, L, H, E, F)
   b. straight and slant line letters (A, V, W, X, Y)
      (N, M, K, Z)
   c. circle and line letters (D, B, P, R)
      (C, O, Q, G)
      (S, U, T)

SKILL: WRITING A PARAGRAPH

Entry Skills: writes simple sentence with action/naming words
gives three-four sentence answer to question
gives three-four sentences on the same subject

Sequence Steps:

Steps 1-5: Given a topic...

1. writes 2 sentences that both relate to the topic
2. writes 3 related sentences
3. writes a summary sentence and 1 supportive sente
4. writes a summary sentence and 2 supportive sente
5. writes a summary sentence and 3 supportive sente

6. given a properly indented and completed sentence adds punctuation
7. given a list of 3 sentences, arranges into paragraph form, including indenting, punctuation, periods, capitals
8. given a topic, writes a summary sentence and 2 supportive sentences using proper paragraph fo
9. given a topic, writes a summary sentence and 3 supportive sentences using proper paragraph fo

10. given a question from context material, forms a paragraph of atleaat 3 sentences to answer the question
11. given a contextual article or story, writes a summary paragraph of atleast 3 sentences in proper paragraph form